

### Remarks

This invention relates to a method and apparatus for transmitting data to a multicast group using unicast techniques. Essentially, a user who desires to receive a particular data set, such as a program, "listens in" on a unicast of such data set in a monitor mode. If the original recipient of the data set becomes disabled, a user who is receiving the data set in a monitor mode may become a unicast recipient in a normal mode. Nowhere do the cited references, taken either singly or in combination, show or suggest the instant invention.

The Examiner has objected to Claim 11 because of the presence of "ID". This expression has been changed to -- intermediate device--, as suggested by the Examiner.

The Examiner has rejected Claims 1-5 and 13-17 under 35 USC 112 as not being clear how a first user device knows if a second user device is neither in a unicast session nor in the coverage area. Claim 1 has been clarified to add the expression from Claim 2, --testing to determine if said second user device is still active--. The Applicants submit that the Examiner's rejection of Claim 1 is thereby overcome.

The Examiner is respectfully requested to reconsider his rejection of Claim 13 under 35 USC 112. Claim 13 specifically recites:

"means for monitoring transmissions of said multicast data packets from said intermediate device by said first user device to determine whether said identified multicast data packets are being transmitted between said intermediate device and a second user device in an already established unicast session between said second user device and said intermediate device"

It is therefore clear that Claim 13 presently sets forth how the first user device knows if the second user device is neither in a unicast session nor in the coverage area.

The Examiner has rejected Claims 1 and 13 as unpatentable over US 2002/0143951 to Kahn et al, US 2004/0131075 to Sinnarajah et al, US 2007/0226577 to

Lee, US 2003/0078044 to Leung, and the Applicants' Admitted Prior Art (AAPA) set forth on page 2, lines 6, 7 and 19 of the instant specification. The Applicants can not agree.

Kahn et al relates to an arrangement for bridging a multicast message to a unicast transmission, in which an agent receives multicast packets, repackages the multicast packets to unicast packets, and a sends the unicast packets to a client.

Sinnarajah et al relates to a cell phone system which provides both multicast and point-to-point service. A first channel carries a multi-cast notification and a channel assignment. A subscriber receives a multicast message on an assigned channel.

If Sinnarajah et al were to be used with Kahn et al, the agent would notify a client on one channel, and send a multicast message to the client on another channel.

Lee relates to error control in multicasting across cable or satellite networks. Lee uses a hybrid of ARQ (automatic repeat request) and FEC (forward error correction). Redundant packets are sent along with video packets, in accordance with FEC. However if errors can not be corrected using the redundant packets, retransmission is requested and received using unicast.

The Examiner appears to have misinterpreted paragraph 0037 of Lee. In this paragraph Lee indicates that broadband residential networks have a relatively low loss rate. For this reason, retransmission requests and replies are both sent using unicast instead of multicast. Multi-casting retransmission requests and replies are more effective for networks with higher loss rate and co-related packet losses. It is clear that Lee teaches away from the use of multicast retransmission requests.

If Lee were to be used with Sinnarajah et al and Kahn et al, a client would receive redundant packets in accordance with FEC. If such error correction is insufficient, a client would request retransmission from the agent, who would request retransmission from the source.

Leung relates to an arrangement for handoff in broadcast communication systems. Leung detects the need for handoff, notifies a higher layer about the need for handoff,

and initiates re-synchronization from a first broadcast channel to a second broadcast channel.

AAPA (page 2, lines 6-7 and 19 of the instant specification) indicates that if a broadcast or multicast originator is a mobile terminal, data is first transmitted to an intermediate device or access point in a unicast transmission, and that it is difficult or impossible for a broadcast source to manage a retransmission protocol for each receiver.

If Kahn et al were to be combined with Sinnarajah et al, Lee, Leung and AAPA, retransmission would be requested from the agent by a unicast transmission, but the agent would not request retransmission from the source. There would be a handoff as the client passed from one cell to another.

Even if all of the above references were to be combined, there would be no showing or suggestion of the use of unicasting in order to obtain multicasting. It is therefore clear that the patentability of Claims 1 and 13 is not affected by the cited references.

The Examiner has rejected Claims 6, 18 and 27 as unpatentable over Kahn et al, Sinnarajah et al, and Lee. As discussed above, if these references were to be combined, a client would receive redundant packets (FEC), and if insufficient, would request retransmission (ARC) from the agent, who would request retransmission from the source. Nowhere would the suggested combination show or suggest the use of unicasting in order to obtain multicasting. It is therefore clear that the patentability of Claims 6, 18 and 27 is not affected by the cited references.

The Examiner has rejected Claim 25 as unpatentable over Kahn et al, Sinnarajah et al, Lee, and AAPA. As indicated above, in such a combination, a client would receive redundant packets (FEC), and if insufficient, would request retransmission from the agent, who would be expected to request retransmission from the source. However since AAPA indicates that it is difficult or impossible for a broadcast source to manage a retransmission protocol for each receiver, the agent would not request retransmission from the source, and errors would not be corrected. Nowhere would the combination

show or suggest the use of unicasting to convey broadcast or multicast data. It is therefore clear that the patentability of Claim 25 is not affected by the cited references.

Claim 29 has been rejected as unpatentable over Kahn et al in view of Sinnarajah et al. As discussed above, if Kahn et al were to be used with Sinnarajah et al, the agent would notify the client on one channel, and send a multicast message to the client on another channel. Nowhere would the combination show or suggest:

“means for establishing a unicast session and means for encapsulating said multicast data packets in a unicast frame”,

as specifically set forth in Claim 29. It is therefore clear that Claim 29 is not affected by the cited references.

Claim 32 has been rejected as unpatentable over Kahn et al in view of Sinnarajah et al. As discussed above, if Kahn et al were to be used with Sinnarajah et al, the agent would notify the client on one channel, and send a multicast message to the client on another channel. Nowhere would the combination show or suggest:

“means for establishing a unicast session with said multicast-to-unicast converter;  
means for identifying multicast data packets associated with a multicast group;  
means for encapsulating said multicast data packets in a unicast frame; and  
means for forwarding said unicast frames via said unicast session”,

as specifically recited in Claim 32. It is therefore clear that the patentability of Claim 32 is not affected by the cited references.

Claims 2-5 are dependent from Claim 1 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 1.

Similarly, Claims 7-12 are dependent from Claim 6 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 6.

Similarly, Claims 14-17 are dependant from Claim 13 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 13.

Similarly Claims 19-24 are dependent from Claim 18 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 18.

Similarly, Claim 26 is dependent from Claim 25 and adds further advantageous features. The Applicants submit that this subclaim is patentable as its parent Claim 25.

Similarly, Claim 28 is dependent from Claim 27 and adds further advantageous features. The Applicants submit that this subclaim is patentable as its parent Claim 27.

Similarly, Claims 30 and 31 are dependent from Claim 29 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 29.

Similarly, Claims 33 and 34 are dependent from Claim 32 and add further advantageous features. The Applicants submit that these subclaims are patentable as their parent Claim 32.

Cited US 2003/0053434 to Chow et al has been applied only to dependent Claims 4 and 16. Chow et al relates to a push-to-talk (non-duplexed) arrangement using a network such as a WLAN. Each user has a separate transmitted packet stream, which is combined with others and retransmitted on a downstream multicast channel. It is clear that Chow et al does not affect the patentability of any of the independent claims.

Customer No. 24498  
Serial No. 10/572,818  
Resp. to OA dated 10 Nov 2008

PATENT  
PU030279

The Applicants submit that the instant application is in condition for allowance.  
A notice to that effect is respectfully solicited.

Respectfully submitted,  
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Date: 10 March 2009